CLAIMS

I claim:

1. A nucleic acid molecule which comprises a transcriptional unit for an immunogenic flavivirus antigen, wherein the transcriptional unit directs a host cell, after being incorporated therein, to synthesize the immunogenic antigen.

2. The nucleic acid molecule described in claim 1, wherein the flavivirus is chosen from the group consisting of yellow fever virus, dengue type 1 virus, dengue type 2 virus, dengue type 3 virus, dengue type 4 virus, and Japanese encephalitis virus (JEV).

3. The nucleic acid molecule described in claim 2 wherein the antigen is chosen from the group consisting of the M protein, the E protein, and both the M and the E proteins.

4. The nucleic acid molecule described in claim 3 wherein the antigen is both the M and the E proteins, and wherein the host cell secretes subviral particles comprising the flavivirus M and E antigens.

5. The nucleic acid molecule described in claim 1 which is a DNA molecule.

6. The nucleic acid molecule described in claim 1 wherein the transcriptional unit further comprises a control sequence disposed appropriately such that it operably controls the expression of the M and E antigens.

7. The nucleic acid molecule described in claim 6 wherein the control sequence is the cytomegalovirus immediate early promoter.

8. The nucleic acid molecule described in claim 1 wherein the transcriptional unit further comprises a poly-A terminator.

9. A host cell harboring a nucleic acid molecule which comprises a transcriptional unit for an immunogenic flavivirus antigen, wherein the transcriptional unit directs the host cell to synthesize the immunogenic antigen.

10. The host cell described in claim 9 wherein the flavivirus is chosen from the group consisting of yellow fever virus, dengue type 1 virus, dengue type 2 virus, dengue type 3 virus, dengue type 4 virus, and JEV.

11. The host cell described in claim 10 wherein the flavivirus antigen is chosen from the group consisting of the M protein, the E protein, and both the M and the E proteins.

12. The host cell described in claim 11 wherein the antigen is both the M and the E proteins, and wherein the cell secretes subviral particles comprising the flavivirus M and E antigens

13. A composition for vaccinating a subject against a flavivirus comprising a nucleic acid molecule which comprises a transcriptional unit for an immunogenic antigen of the flavivirus, wherein the transcriptional unit directs a cell within the body of the subject, after being incorporated therein, to synthesize the immunogenic antigen, and wherein the composition further comprises a pharmaceutically acceptable carrier.

14. The vaccinating composition described in claim 13, wherein the flavivirus is chosen from the group consisting of yellow fever virus, dengue type 1 virus, dengue type 2 virus, dengue type 3 virus, dengue type 4 virus, and JEV.

15. The vaccinating composition described in claim 14 wherein the antigen is chosen from the group consisting of the M protein, the E protein, and both the M and the E proteins.

16. The vaccinating composition described in claim 15 wherein the antigen is both the M and the E proteins, and wherein the cell secretes subviral particles comprising the flavivirus M and E antigens.

17. The vaccinating composition described in claim 13 wherein the nucleic acid molecule is a DNA molecule.

18. The vaccinating composition described in claim 13 wherein the transcriptional unit further comprises a control sequence disposed appropriately such that it operably controls the expression of the M and E antigens when the nucleic acid is introduced into the cell of the subject.

19. The vaccinating composition described in claim 18 wherein the control sequence is the cytomegalovirus immediate early promoter.

20. The vaccinating composition described in claim 13 wherein the transcriptional unit further comprises a poly-A terminator.

21. A method of immunizing a subject against infection by a flavivirus comprising administration to the subject of an effective amount of a vaccinating composition comprising a nucleic acid molecule which comprises a transcriptional unit for an immunogenic flavivirus antigen, wherein the transcriptional unit directs a cell within the body of the subject, after being incorporated therein, to synthesize the immunogenic antigen, the composition further comprising a pharmaceutically acceptable carrier.

22. The method of immunizing a subject described in claim 21, wherein the flavivirus is chosen from the group consisting of yellow fever virus, dengue type 1 virus, dengue type 2 virus, dengue type 3 virus, dengue type 4 virus, and JEV.

23. The method of immunizing a subject described in claim 22 wherein the antigen is chosen from the group consisting of the M protein, the E protein, and both the M and the E proteins.

24. The method of immunizing a subject described in claim 23 wherein the antigen is both the M and the E proteins, and wherein a cell within the body of the subject, after incorporating the nucleic acid within it, secretes subviral particles comprising the flavivirus M and E antigens.

25. The method of immunizing a subject described in claim 21 wherein the method further comprises administering the vaccinating composition to the subject in a single dose.

26. The method described in claim 21 wherein the vaccinating composition is administered via a parenteral route.

27. The method of immunizing a subject described in claim 21 wherein the nucleic acid is a DNA molecule.

28. The method of immunizing a subject described in claim 21 wherein the transcriptional unit further comprises a control sequence disposed appropriately such that it operably controls the expression of the M and E antigens.

29. The method of immunizing a subject described in claim 28 wherein the control sequence is the cytomegalovirus immediate early promoter.

30. The method of immunizing a subject described in claim 21 wherein the transcriptional unit further comprises a poly-A terminator.

31. The nucleic acid molecule described in claim 1, wherein the flavivirus is St. Louis encephalitis virus.

32. The host cell harboring the nucleic acid progenitor described in claim 9 wherein the flavivirus is St. Louis encephalitis virus.

33. The vaccinating composition described in claim 13, wherein the flavivirus is St. Louis encephalitis virus.

34. The method of immunizing a subject against infection by a flavivirus described in claim 21, wherein the flavivirus is St. Louis encephalitis virus.